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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,517	02/09/2004	Don Michael	200314165	1062

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EXAMINER	
FULK, STEVEN J	

ART UNIT	PAPER NUMBER
2891	

NOTIFICATION DATE	DELIVERY MODE
06/16/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/775,517	MICHAEL ET AL.	
	Examiner	Art Unit	
	STEVEN J. FULK	2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-16,24,27,28,30-50 and 54-63* is/are pending in the application.

4a) Of the above claim(s) *6,9-16,30,31 and 48-50* is/are withdrawn from consideration.

5)☒ Claim(s) *32-42 and 54-56* is/are allowed.

6)☒ Claim(s) *1,3,7,24,27,43-45,57,58,60 and 61* is/are rejected.

7)☒ Claim(s) *2,4,5,28,46,47,59,62 and 63* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 7, 24, 27, 43-45, 57 and 60 are rejected under 35 U.S.C. 102(e) as being anticipated by Lutz et al. '367.

Regarding claims 1, 3, 7 and 57 Lutz discloses a package for a micro-electromechanical device (MEMS package), comprising: an inner enclosure having an inner cavity defined therein (fig. 2, cavity 28); and a fill port channel (32) communicating with the inner cavity through the inner enclosure; wherein the fill port channel comprises a feature internal to the inner enclosure that permits passage of a fluid to the inner cavity, but restricts flow of an adhesive to allow a quantity of adhesive to enter the fill port channel while preventing the adhesive from entering the inner cavity (adhesive 34 enters channel but not cavity 28); and further comprising a flow control structure (fig. 7A, trap 60) extending at least partially into the fill port channel and wherein the flow control structure prevents the adhesive from entering the cavity by physically obstructing a portion of the fill port channel (fig. 7A/7B, element 22 obstructs the channel and trap 60 prevents adhesive 34 from entering cavity 28); further comprising a

peninsula that physically separates a portion of the inner cavity from the fill port channel (fig. 7A, peninsula region to the right of trap 60); and further comprising a fluid filling the inner enclosure (col. 3, lines 41-45; anti-stiction fluid).

Regarding claims 24, 27 and 60, Lutz discloses a package for a micro-electromechanical device (MEMS device), comprising: an inner enclosure having an inner cavity (fig. 2, 28) defined therein; a fill port channel (32) coupling the inner cavity to an atmosphere; a peninsula in the inner cavity that physically separates a portion of the inner cavity from the fill port channel to control the flow of fluid into the inner cavity (fig. 7A, peninsula region to the right of trap 6); further comprising locking features formed in the fill port channel internal to the inner enclosure (trap 60); and further comprising a fluid filling the inner enclosure (col. 3, lines 41-45; anti-stiction fluid) and an adhesive in the fill port channel to seal the channel (fig. 7A, adhesive 34).

Regarding claims 43-45, Lutz discloses a method of forming a package for a micro-electromechanical device (MEMS device), comprising: forming an inner enclosure having an inner cavity (fig. 2, 28) defined therein and forming a fill port channel (32), wherein the fill port channel extends through the inner enclosure so as to be in fluid communication with an atmosphere and the inner cavity and comprises a feature internal to the inner enclosure that permits passage of a fluid to the inner cavity and allows a variable flow of adhesive to enter the fill port channel while preventing the adhesive from entering the inner cavity; and flowing a quantity of adhesive through a fill port of the fill port channel and into the fill port channel (34); wherein the fill port channel extends at least partially into the inner enclosure and further comprising forming a flow

control locking feature (fig. 7A, trap 60) to form the fill port channel and to physically separate the fill port channel from the inner cavity (fig. 7A/7B, element 22 obstructs the channel and trap 60 prevents adhesive 34 from entering cavity 28).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 58 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz et al. '367.

Lutz discloses all of the elements of the claim(s) as set forth in paragraph 2 above, but the reference does not explicitly disclose the package to comprise an airless interface between the fluid and the adhesive in the fill port channel. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form an airless interface between the fluid and adhesive of Lutz in order to completely cover the MEMS device with anti-stiction fluid and prevent air bubbles from allowing stiction to occur, thus improving the performance of the device.

Response to Arguments

5. Applicant's arguments with respect to the rejection of claims 1, 24 and 43 as being anticipated by Lutz '367 have been fully considered but they are not persuasive. Applicant argues that Lutz does not teach a feature internal to the inner enclosure that permits passage of a fluid, but restricts flow of an adhesive; nor does Lutz teach a

peninsula in the inner cavity that physically separates a portion of the inner cavity from the fill port channel to control the flow of fluid into the inner cavity. These arguments are not persuasive because, in figure 7A, Lutz clearly teaches the peninsula next to trap 60 to permit passage of a fluid but restrict flow of adhesive 34.

Allowable Subject Matter

6. Claims 2, 4, 5, 28, 46, 47, 59, 62 and 63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claim 32-42 and 54-56 are allowed. Claim 56, directed to a withdrawn species, is no longer withdrawn from consideration because the claim(s) requires all the limitations of an allowable claim.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

8. The following is a statement of reasons for the indication of allowable subject matter: a search of the prior art failed to disclose or reasonably suggest a MEMS package comprising an inner enclosure having an inner cavity defined therein; a fill port

channel communicating with the internal cavity, wherein the fill port tapers to a choke point, as recited by claims 2, 28, 46, 47, 54-56 and 63.

A search of the prior art also failed to disclose or reasonably suggest a MEMS package comprising an inner enclosure having an inner cavity defined therein; and a fill port channel communicating with the internal cavity, further comprising a flow control structure extending at least partially into the fill port channel, and further comprising locking features formed on the flow control structure, wherein the locking features cause the fill port channel to have a variable cross section, as recited by claims 4 and 5.

A search of the prior art also failed to disclose or reasonably suggest a MEMS package comprising an inner enclosure having an inner cavity defined therein; and a fill port channel communicating with the internal cavity, and comprising at least one diaphragm disposed the inner cavity for changing a volume of the inner cavity so as to draw a quantity of the adhesive through the fill port channel, as recited by claim 59.

A search of the prior art also failed to disclose or reasonably suggest a MEMS package comprising an inner enclosure having an inner cavity defined therein; a fill port channel coupling the inner cavity to an atmosphere; and comprising at least one diaphragm disposed the inner cavity for changing a volume of the inner cavity so as to draw a quantity of the adhesive through the fill port channel, as recited by claim 62.

A search of the prior art also failed to disclose or reasonably suggest a MEMS assembly, comprising a MEMS device disposed at least partial]y within a package; the package including an inner enclosure having an inner cavity defined therein, and a fill port channel coupling the inner cavity to an atmosphere and physically separating the

atmosphere and the inner cavity by a distance sufficient to allow a variable flow of adhesive to enter the fill port channel while preventing the adhesive from entering the inner cavity; an adhesive seal coupled to the fill port channel; and a diaphragm disposed in the inner cavity for changing a volume of the inner cavity so as to draw a quantity of the adhesive seal through the fill port channel, as recited in claim 32.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN J. FULK whose telephone number is (571)272-8323. The examiner can normally be reached on Monday through Friday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven J. Fulk
Patent Examiner
Art Unit 2891

June 5, 2008

/Douglas M Menz/
Primary Examiner, Art Unit 2891
6/8/08